

WHAT IS CLAIMED IS:

1. A sensing apparatus comprising:
 - a driving coil for exciting a magnetic substance core with current;
 - a current amplifier for applying the current to first and second ends of the driving coil;
 - a fluxgate having a pulse generator for generating a pulse to turn on/off the current amplifier;
 - an A/D converter for converting an analog signal from the fluxgate into a digital signal; and
 - a pulse controller for outputting a control signal allowing the pulse to be applied to the current amplifier until it is determined that the conversion of the analog signal into the digital signal by the A/D converter is completed.
2. The sensing apparatus as claimed in claim 1, further comprising an AND gate for logical AND-ing the pulse from the pulse generator with the control signal from the pulse controller to send output to the current amplifier.
3. The sensing apparatus as claimed in claim 2, wherein the pulse controller outputs a high level signal when the fluxgate initiates a drive, and the pulse controller outputs a low level signal when it is determined that the

conversion of the analog signal into the digital signal by the A/D converter is completed.

4. The sensing apparatus as claimed in claim 3, wherein the pulse controller outputs the low level signal a predetermined time period after determining that the conversion of the analog signal into the digital signal is completed.

5. A sensing apparatus having a fluxgate comprising: a pulse controller for generating a pulse to block current from flowing into a driving coil of the fluxgate when it is determined that conversion of an analog signal from the fluxgate to a digital signal is completed by an A/D converter.

6. A control method of a sensing apparatus having a driving coil for exciting a magnetic substance core with current; a current amplifier for applying current to first and second ends of the driving coil; a fluxgate with a pulse generator for generating a pulse to turn on/off the current amplifier; an A/D converter for converting an analog signal from the fluxgate into a digital signal; and a pulse controller for outputting a control signal for controlling the pulse generator, the control method comprising:

- a) driving the pulse generator when the fluxgate initiates a drive and outputting a control signal in order for the pulse generated from the pulse generator to be applied to the current amplifier; and
- b) outputting a control signal in order for the pulse generated from the pulse generator not to be applied to the current amplifier when it is determined that the conversion of the analog signal into the digital signal by the A/D converter is completed.

7. The control method as claimed in claim 6, wherein the sensing apparatus further has an AND gate for logical AND-ing the pulse from the pulse generator with the control signal from the pulse controller to send output to the current amplifier.

8. The control method as claimed in claim 7, wherein in a) the pulse controller outputs a high level signal as the control signal to the AND gate, and in b) the pulse controller outputs a low level signal as the control signal to the AND gate.